ESB

Forty sixth Annual Report
For year ended 31st March 1973

ELECTRICITY SUPPLY BOARD IRELAND

ELECTRICITY SUPPLY BOARD - Lr. Fitzwilliam Street, Dublin 2. IRELAND

Board Members

T. MURRAY, B.A., LL.D., Chairman

R. J. CONNOLLY.

C. GORDON LAMBERT, B.A., B.Comm., F.C.A.

T. MacMAHON, B.E., B.Sc.

B. O CEARBHAILL, B.A., LL.B.

J. A. RYAN, M.A.

BARBARA SWEETMAN.

Chief Executive

J. J. KELLY, M.E., F.I.E.I., F.I.Mech.E

Directors

Generation-Transmission **S. TINNEY,** B.E., B.Sc., M.I.E.E.

Finance **L. J. BARRY,** F.C.C.A.

Personnel **P. J. MORIARTY,** F.C.I.S.

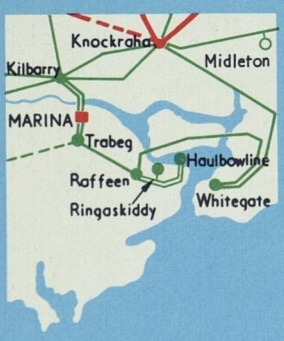
Commercial **M. J. SHIEL,** B.E., B.Sc., M.I.E.E.

Secretary

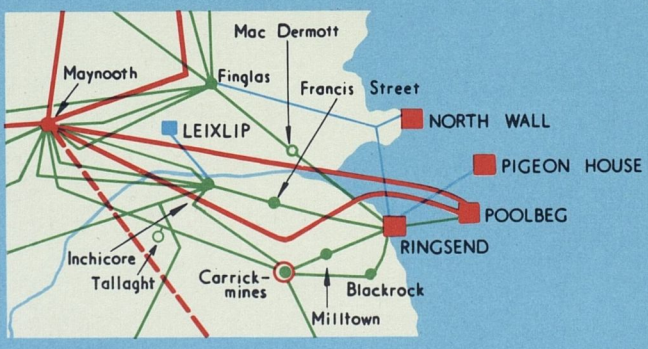
J. G. GARGAN, B.L., F.C.C.A.

GWEEDORE
CLADY
Letterkenny
CATHALEEN'S FALL
CLIFF
Sligo
BELLACORICK
ARIGNA
Carrick-on-Shannon
Shankill
To N.I.E.S.
Dundalk
Louth
Castlebar
LANESBOROUGH
Navan
Drybridge
Platin
Mullingar
Finglas
Maynooth
Athlone
See inset 2 below for details
Inchicore
SHANNON-BRIDGE
RHODE
ALLENWOOD
SCREEB
FERBANE
Newbridge
Tallaght
Carrick-mines
Derryfrench
Tynagh
Galway
PORTARLINGTON
GOLDEN FALLS
POLLAPHUCA
Portlaoise
Carlow
TURLOUGH HILL
Arklow
Ennis
Shelton Abbey
MILTOWN MALBAY
Ahane
Kilkenny
ARDNACRUSHA
Killonan
Thurles
Limerick
TARBERT
Rathkeale
Wexford
Cahir
Charleville
Waterford
GREAT ISLAND
Butlerstown
Tralee
Fermoy
Mallow
Dungarvan
Midleton
CAHIRCIVEEN
Kilbarry
Knockraha
Macroom
CARRIGADROHID
INNISCARRA
MARINA
Haulbowline
Whitegate
Trabeg
Ringaskiddy
Raffeen
Bandon
Dunmanway
See inset 1 below for details

INSET 1



INSET 2



General outline of the

GENERATION and TRANSMISSION SYSTEMS

31st March, 1973

- HYDRO STATIONS
- STEAM STATIONS
- STEAM STATIONS PROJECTED
- PUMPED STORAGE STATION PROJECTED
- 220 KV TRANSFORMER STATION
- 220 KV TRANSFORMER STATIONS PROJECTED.
- 110 KV TRANSFORMER STATIONS
- 110 KV TRANSFORMER STATIONS PROJECTED
- 220 KV LINES
- 220 KV LINES PROJECTED
- 110 KV LINES
- 110 KV LINES PROJECTED
- 275 KV LINES PROJECTED
- OTHER HIGH VOLTAGE LINES
- NORTH/SOUTH INTERCONNECTION No. 2

Significant Facts

	1972–73	1971–72
REVENUE		
Electricity	60,321,000	51,967,000
Appliance Sales (Net of Taxes)	£3,401,000	£2,440,000
Installations	£1,566,000	£1,539,000
ASSETS	£318,058,000	£286,291,000
PAYROLL	£25,434,000	£23,167,000
SALES (in million of units)	5,705	5,272
GENERATION CAPACITY (MW)	1,798	1,678
PEAK DEMAND (MW)	1,383	1,290
LOAD FACTOR	55.8%	55.3%
NO. OF CONSUMERS	845,119	818,516
NO. OF EMPLOYEES	11,700	11,800

(Cash figures are rounded off to the nearest thousand)

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To the Minister for Transport and Power

The Board presents the Annual Report and Accounts for the year ended 31st March, 1973, in accordance with the Electricity (Supply) Acts, 1927/72.

Consumption of electricity increased by 8.2% as compared with the long-term average of 10%. Growth in the industrial sector was up by 11.4% but, in the domestic and commercial sectors, demand was rather lower than that expected. The Board is satisfied that the annual average will continue to be achieved, and attributes the falling-off this year in the domestic and commercial sectors to the unusually mild weather and the setback experienced by the tourist industry. Peak demand reached its highest ever level at 1,383 megawatts.

The Board's total generating capacity was increased to 1,797.5 MW with the commissioning of the 120 MW unit at Great Island.

The financial result for the year was a deficit of £1,392,594.The deficit brought forward from 1971-72 was £1,318,253 and the accumulated deficit at 31st March, 1973 is £2,710,847.

A deficit in one year is not significant if it is possible, taking one year with another, to achieve a balanced position. It is, however, a warning that price levels are incorrect, and for this reason the Board must draw to the attention of the community the fact that inadequate prices will lead to successive deficits which will ultimately cost the consumer more money than if a balanced position were achieved from year to year. In the present situation the money to finance these deficits must be borrowed abroad. On April 12th last, the National Prices Commission recommended that the E.S.B. should be allowed to raise its charges by 3½% instead of the 11% which the Board sought. The Board recognises the dilemma of the Prices Commission in relating the operations of the E.S.B. to the criteria laid down for business generally and it accepts the discipline of price control measures, especially in the current inflationary situation. It must, however, be pointed out that the Board is also a statutory body, governed by specific legislation which imposes the requirement that the price of electricity must be fixed to balance income with expenditure and without the profit motive. The only revenue available to the E.S.B. is the income from the sale of electricity and its source of capital finance is repayable borrowings. Its financial structure is based on the Electricity Acts which require it, in the long-term interest of the consumer, to pay its way as it goes. Paying its way includes repaying those capital borrowings over the life of the plant purchased.

The amount of capital currently required to cater for the demands of the community is about £35 million per year, and is increasing steadily. Within the next decade the amount of new capital required to provide an adequate electricity supply is of the order of £450 million. The greater proportion of this will have to be borrowed and it is obvious that, if a borrowing programme on this scale is to be sustained, the Board must maintain its unblemished record of prompt repayment of all of its contractual commitments.

In the public mind deficits are often associated with inefficiency, particularly in the case of State organisations. This is not necessarily correct if, for reasons outside its direct control, the organisation is prevented from paying its way. In the case of the E.S.B., two options are available:

(a) to operate the business as a commercial entity, required to pay its way fully, to raise its own development capital, and thus be independent of the need for direct Government subsidy; or

(b) to operate as an essential service for the community, part of the cost of operation being supplied by way of Government subsidy.

The concept at (a) is that enshrined in the Electricity Acts. The Board believes firmly that this is still the best course in the interest of the electricity consumer. Any change could only follow detailed examination of the principles involved and consequent change in law.

In considering the general question of efficiency it is pertinent to recall the Report of the Fletcher Committee whose findings were, on the whole, complimentary to the Board's performance and planning. The Report noted that, in real money terms, the price of electricity has been reduced by 35% over the past decade. Where the Report indicated that certain improvements might be made (e.g. in the matter of staffing), such improvements as are within the Board's competence are now well in hand.

A significant achievement during the year has been the 40% overall thermal efficiency on units sent out from the new Poolbeg Station which is excellent by any standard in the world.

The Board feels that consideration should now be given to the long-term future of the peat-fired stations. There is no doubt that the peat development programme has brought immense benefits to the midland areas but, looking to the future, the Board feels that planning at national level should now be undertaken to protect employment in these areas in the long-term.

The long-term cost and availability of fuel continues to be a matter for concern. By the end of the next decade oil will be the source of about 80% of the Board's total energy requirements. With oil prices soaring and uncertainty about continuity of supplies, diversification of our energy sources must be considered. For this reason the Board has completed a feasibility study for a nuclear station. A recommendation has been made to the Government with whom the decision for further action now rests. A nuclear station could not in any event be commissioned before 1981. Attention is also being paid to the possible discovery of gas/oil in workable commercial quantities off our coasts and to its potential as an energy source. With the considerable growth in electricity demand the discovery of gas/oil would be an addition to nuclear development rather than a substitute for it.

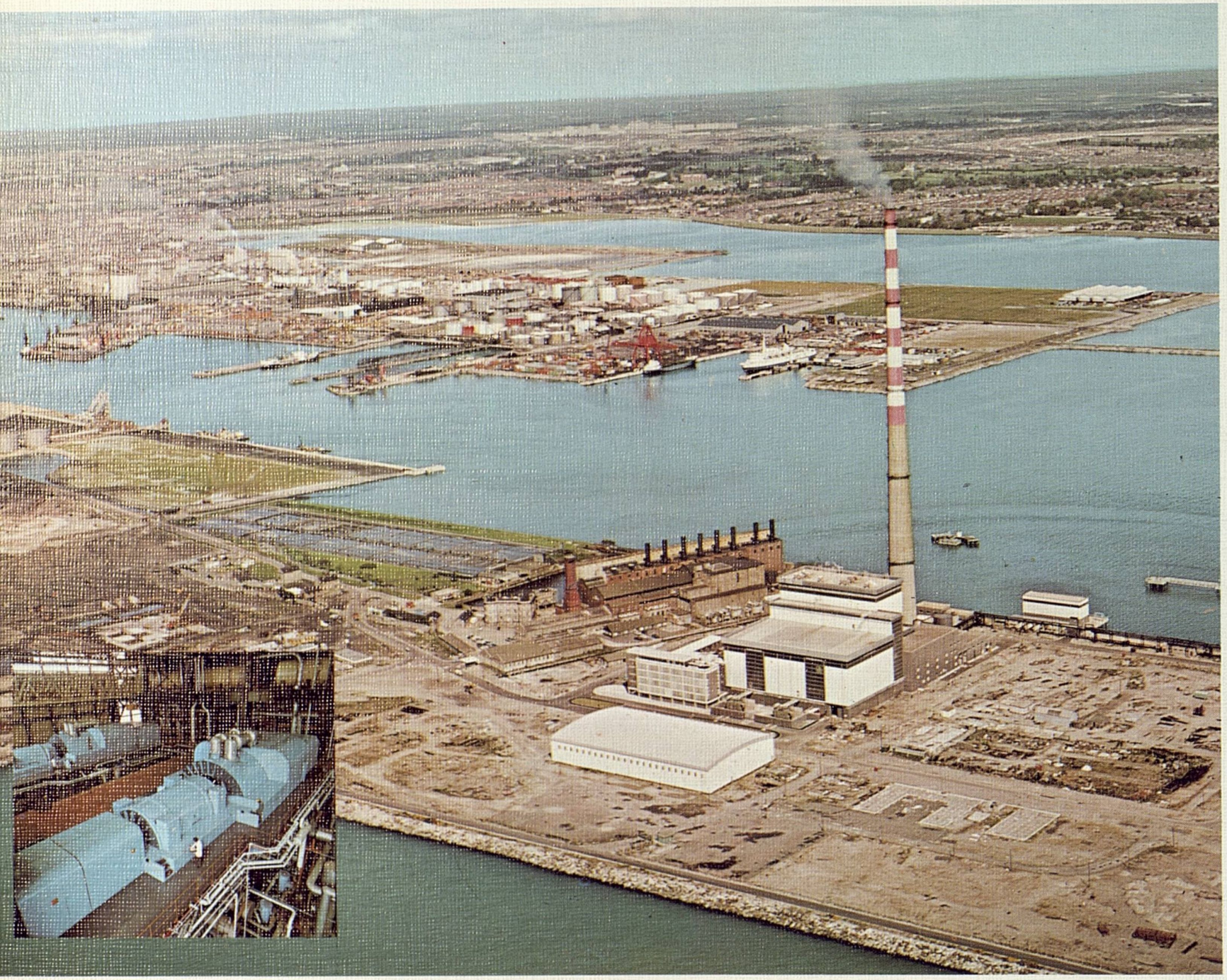
The Board is not now concerned to promote growth of electricity per se. In common with almost every other electricity undertaking in the world it is endeavouring instead to influence the development of a more economic load pattern so as to make better use of installed capacity. In the last ten years the system load factor has improved from 49.1% to 55.8%. Any reduction in peak demand represents a saving in capital investment.

Conditions have changed very considerably since the E.S.B. was established in 1927 and it has now become necessary that the community should take a fresh look at the future of the Board. The Board has recently prepared a document – "The Role of the E.S.B." – which, after a brief review of events since 1927, examines the Board's objectives and basic strategies over the next twenty years or so. Since the assets of the Board are public property and its continued efficiency and development are essential for the welfare of the community, public discussion of this document would be welcome.

The Board's operations include those fisheries affected by hydro development. A great deal has already been achieved by re-stocking and the success of the Board's hatcheries at Parteen and Carrigadrohid has been the subject of favourable comment by fishing interests. Much attention is given to preservation of the environment; cases in point during the year were the development of amenities around the Pollaphuca Lakes and the provision of tourist facilities at the new pumped storage station at Turlough Hill in Co. Wicklow.

It cannot be repeated too often that the primary objective of the E.S.B. is to serve the long-term interests of the community. In today's world every aspect of social and economic development is dependent on energy supply and, despite the problems outlined, the Board is confident and optimistic about is part in the future. Standards and quality of supply, including safety aspects for the public and the staff, are constantly being improved. Satisfactory progress continues in industrial relations. Prices are low by comparison with other countries and, even if increased to economic levels, would still compare favourably with the rest of Europe.

The Board welcomes the recent appointment of two new members – Mrs. Barbara Sweetman and Mr. Roddy Connolly.



Poolbeg Generating Station, Dublin.
Inset: The two 120MW units.

Electricity Production

The total amount of electricity produced was 6,749 million units, an increase of 8.3% on the previous year's figure of 6,234 million units.

The accompanying diagram gives a comparison of the sources of production and from this it will be seen that the growth in the proportion of electricity generated from imported fuel (oil) has continued, a fact which, as noted elsewhere in this report, gives rise to some concern, as regards both security and cost of supplies.

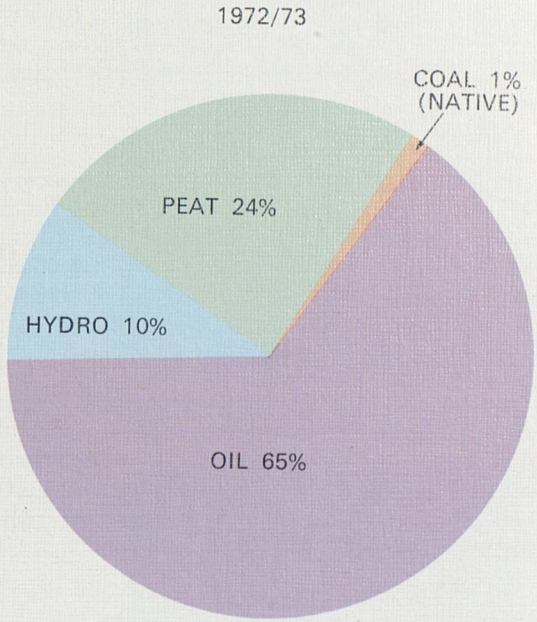
Fuel is one of the major elements of the Board's expenditure, as will be seen from the diagram on page 8. The efficient use of fuel is, therefore, a matter of particular concern in the design of stations, in the control of their operation and in the allocation of loading to the most efficient plant.

It is heartening to report that in 1972/1973, its first full year of operation, the Poolbeg Generating Station achieved an average thermal efficiency of 40% which is a record performance for Board plant and exceeds that of many larger units in other electricity undertakings. (Thermal efficiency is the relationship the electrical energy sent out bears to the energy of the fuel consumed (net calorific value).

Good plant availability and the high load factors achieved resulted in the Poolbeg Station generating 23.8% of the Board's total output and this contributed significantly to the containment of fuel costs.

The total installed capacity of the Board's generating stations is now as follows:

Hydro plant	**219**	**MW**
Steam plant (sod peat)	**117.5**	**MW**
Steam plant (milled peat)	**290**	**MW**
Steam plant (oil)	**1,128**	**MW**
Steam plant (coal)	**15**	**MW**
Gas turbine plant (oil)	**28**	**MW**
	1,797.5	**MW**



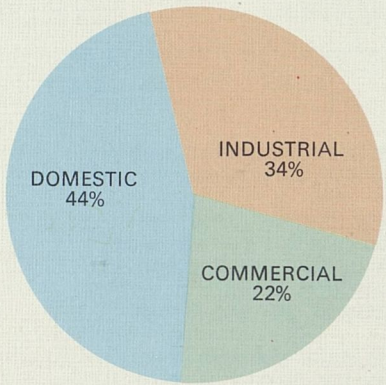
Electricity Sales

With the continued growth in demand for electricity there was an increase in sales of 8.2%. The increase would have been greater but for the interruption of supply in April 1972, due to industrial action.

The distribution of the units sold between the major sectors – domestic, industrial and commercial – is illustrated by the diagram opposite. Growth in the industrial sector continued at a high rate (11.4%) while growth in the domestic and commercial sectors was lower than expected. A fuller analysis of units sold is given in Appendix 3.

The Board continued the use of modern marketing aids, including sample surveys, to identify opportunities and to guide the direction of its promotional efforts, particularly in the commercial and industrial sectors. A significant feature of a survey of office premises was the large number which used electric central heating and the satisfaction expressed with its use.

Consumers, Developers and Consultants, made wide use of the Board's advisory services – domestic, commercial, industrial and lighting. During the year the advice of the industrial service in particular has helped individual industries to improve their efficiency and productivity very considerably. With industry in general becoming more aware of the need to increase competitiveness, it is expected that still greater use will be made of this service in future.



The Board's customers, consulting engineers and architects make wide use of the ESB's advisory services. Photo at Waterford Ironfounders Ltd.



Trading

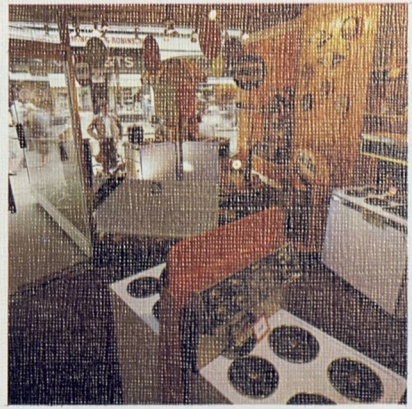
Appliance Trading

Sales of electrical appliances amounted to £3,400,995 compared with £2,439,653 in the previous year. The Appliance Trading Account, having been charged with overhead expenses and interest on working capital, showed a net profit of £186,901 compared with a net profit of £12,629 in 1971/72; this was the highest net profit ever recorded and makes a useful contribution to the revenue position and helps to reduce the overall deficit for the year.

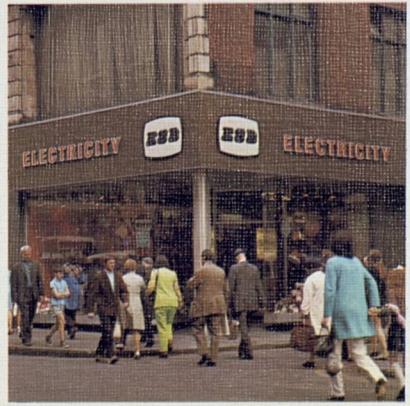
The 40% increase in turnover reflects a high level of staff performance. Turnover has doubled in the past 5 years and the Board is confident that the appliance trading activity will continue to generate a significant revenue surplus.

Installations Trading

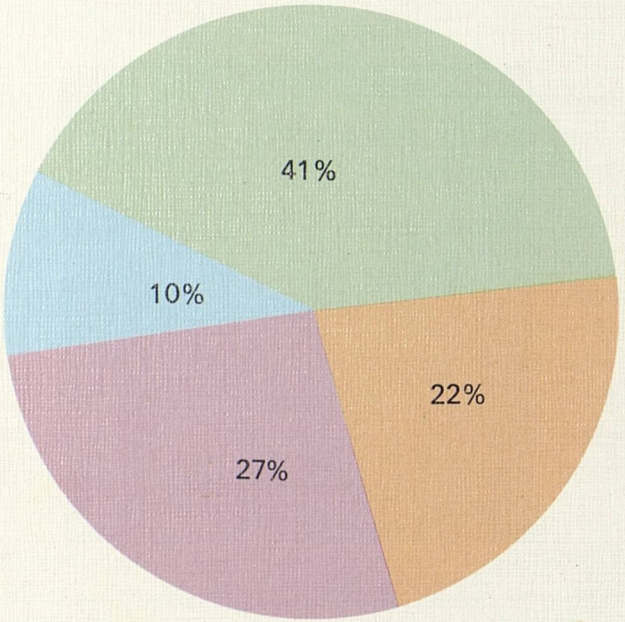
The value of installations contracts completed amounted to £1,565,961 compared with £1,538,582 in the previous year. The gross profit was £273,438, representing a rate of 17.5%. The Installations Trading Account, having been charged with overhead expenses and interest on working capital, showed a record net profit of £47,298 compared with £21,565 in the previous year.



Selling in the market place.
The new ESB shop at Henry St., Dublin.



EXPENDITURE



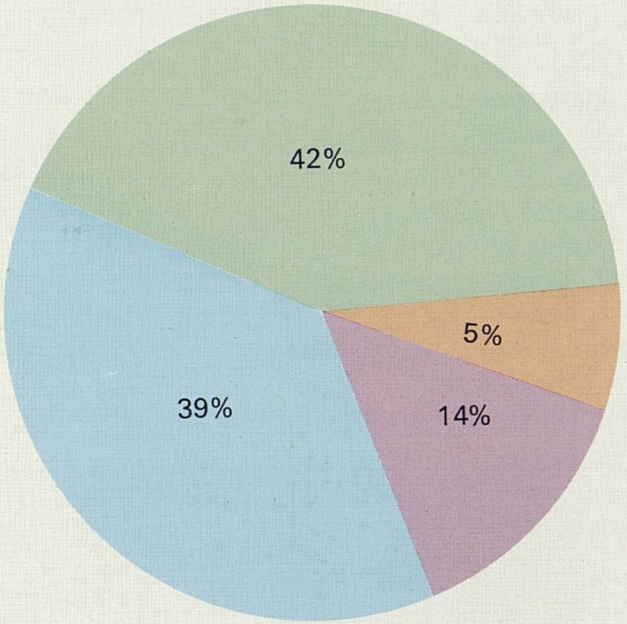
Capital Charges incl. Depreciation

Fuel

Payroll

Materials, Transport and Services

CAPITAL INVESTMENT IN FIXED ASSETS



Distribution

Generation

Transmission

General and Fisheries

Finance

Revenue and Expenditure

Revenue from the sales of electricity and miscellaneous revenue totalled £60,809,706, an increase of £8,414,105 over the previous year. Expenditure incurred was £62,145,012, an increase of £9,748,923 over the figure for 1971/72.

The summarised Electricity Revenue Income and Expenditure figures are as follows:

	Year ended 31st March, 1973 £	*Preceding Year* £
Fuel	13,659,798	12,969,452
Payroll and other direct costs	22,837,279	19,884,735
Capital Charges including Depreciation	25,647,935	19,541,902
	62,145,012	52,396,089
Revenue (including miscellaneous income)	60,809,706	52,395,601
	1,335,306 (Deficit)	488 (Deficit)

Taking credit for profits from installations and appliance sales and deducting the expenses of loan issues, the result for the year was a deficit of £1,392,594 which increases the total deficit carried forward to 1973/74 from £1,318,253 to £2,710,847.

Capital Borrowing

The capital expenditure in the year was financed by

(a) borrowings brought forward from the previous year,

(b) internal resources arising mainly from depreciation cash flows and capital contributions,

(c) private placements with Bank Syndicate led by Northern Bank Finance Corporation, Kredietbank Brussels and Japanese Banks,

(d) further instalments of the loans from the World Bank,

(e) short term credits for the purchase and erection of major plant,

(f) rural subsidy from the Minister for Finance.

The Electricity (Supply) (Amendment) Act, 1971 authorises a capital expenditure not exceeding £450 million for general purposes, including rural electrification. At the 31st March, 1973, the Board had approved expenditure totalling £391,868,496 of which £276,796,462 represented electricity assets in commission, the balance of £115,072,034 representing work in progress and work approved.

Capital Expenditure

The growth in demand for electricity continues to call for a high level of capital investment in new assets. The value of such assets brought into commission this year was £19,881,408 of which £3,825,529 related to rural electrification. Total investment in assets in productive use at 31st March, 1973 was:

	£
Generation	108,289,736
Transmission	38,648,725
Distribution (includes Rural £53,804,320)	116,414,111
Premises and general assets	13,443,890
	276,796,462

In addition, expenditure of £41,261, 301 was incurred on capital works still under construction at the end of the year. Accordingly, the fixed capital investment is £318,057,763. The asset construction programme to meet the planned growth rate requires a heavy investment each year.

Major Construction Works

The major projects at present under construction will meet the projected load growth over the next five years. An extension of the Poolbeg station in Dublin and the installation of Gas Turbine capacity in Cork are at the initial planning stage. All these projects are dependent on imported oil. At present the only feasible alternative is nuclear power to which reference has been made earlier in the Report.

At the end of the year the following generating projects were completed or under construction.

Great Island Station, Co. Wexford (Oil Fired) 1 – 120 MW Set:

The set was commissioned in May 1972. Construction work was completed apart from some minor items.

Tarbert Station, Co. Kerry (Oil Fired) 2 – 250 MW Sets:

Site development was completed and the main civil engineering works had commenced. Building foundations and cooling water culverts were substantially completed and erection of the structural steel for the engine room and boiler house was proceeding. Construction of the chimney and of the 220KV switchyard had begun. Model studies of the extended cooling water system were completed. Work progressed satisfactorily on design and layout of mechanical and electrical plant and orders were placed for much of the auxiliary equipment. Scheduled completion dates for the two 250MW Sets are 1975 and 1976.

Shannonbridge Station, Co. Offaly (Milled Peat Fired) 1 – 40 MW Set:

Tenders were received for the main civil engineering contract and a contract was placed for fabrication and delivery of the structural steel frame of the building. The main features of boiler design were settled. Manufacture of the turbo-alternator continued. Work was in progress on design and layout of miscellaneous items of mechanical and electrical plant. Scheduled completion date for the project is 1976.

Turlough Hill Pumped Storage Scheme, Co. Wicklow 4 – 73 MW Sets:

The project entered the concluding stage leading to the commissioning of the generating plant in 1973-74. During the year the final phase of extensive civil engineering works saw the completion of the main structure of the underground power station, together with its associated access, ventilation, and cable tunnels, except for minor finishing operations. Placing of the asphalt lining of the upper reservoir and construction of the intake structure and its equipment were well advanced. The pressure shaft connecting the power station to the upper reservoir was completed except for painting of the steel lining. The lower reservoir was being filled to operating level. The administration building was completed.

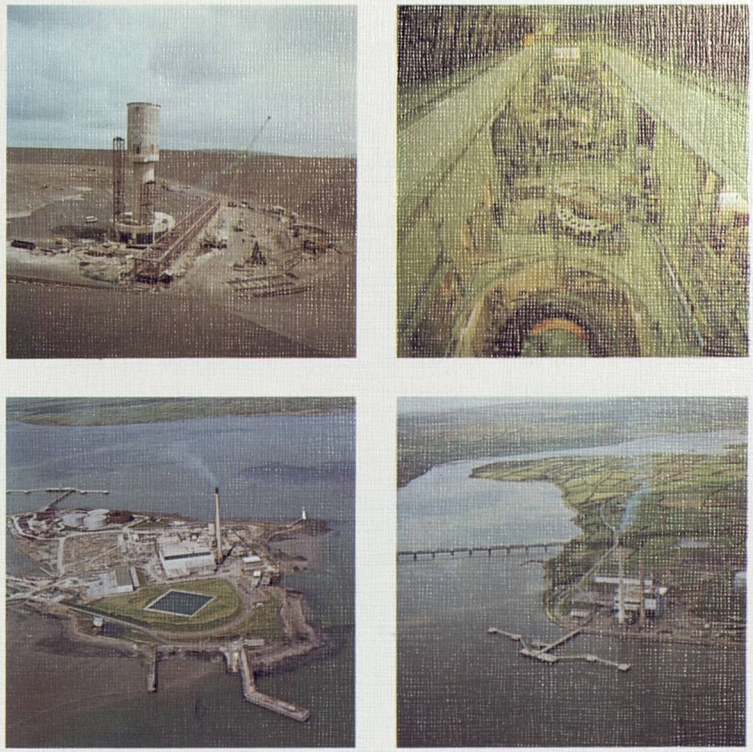
Most of the major plant components were delivered. Two of the pump/turbine units were installed and work proceeded satisfactorily on the erection of mechanical and electrical plant. The station cranes were also erected. The station is scheduled for completion in 1973/74.

Shannon Navigation

Shore based plant completed dredging on the Lanesboro–Tarmonbarry reach and possible further improvements are being studied in association with the Office of Public Works. Consideration is given at all times to balancing, as far as practicable, the Board's requirements for power generation with the provision of maximum recreational facilities on the river.

Studies

The Board continued to investigate and assess possible locations for future generating Stations of all types.



Top left: The intake structure at upper reservoir Turlough Hill.

Top right: The underground Generating Station at Turlough Hill.

Bottom left: Tarbert Generating Station, Co. Kerry.

Bottom right: Great Island Generating Station, Co. Wexford.

Transmission

220kV Transformer Stations

A 220kV Station was completed and commissioned at the village of Louth, near Dundalk, and the Station at Turlough Hill, Co. Wicklow, was nearing completion. Work had commenced on new stations at Carrickmines and Tarbert, while design was progressing on extensions to three existing stations.
The design of the Turlough Hill transformer station is new in Ireland. There are six single phase transformers in banks of three and each bank will take the output of two generators. The transformers are located in individual fire-proof compartments within the cavern and a spare unit is also installed to enhance reliability. The design offers important technical and economic advantages in this location which poses considerable problems of space and transport.

110kV Transformer Stations

Four new stations were commissioned during the year and construction work had reached an advanced stage on two others. Six stations were extended or uprated and an extensive programme of earth grid replacement and improvement is in progress in the older stations.

Overhead Lines

Two major 220kV lines erected during the year were the Great Island – Knockraha and the Maynooth – Finglas – Louth lines; the latter being the second interconnection with Northern Ireland. The two 220kV lines to Turlough Hill from Great Island and Maynooth were well advanced. Survey work was completed or was in progress on a further 262 KM of 220KV line.



Laying the complex of underground transmission cables at Turlough Hill.

A substantial part of the 110kV network was built over 30 years ago and it is planned to replace this gradually over the next five years. As part of this programme the Ardnacrusha – Tynagh line (95mm^2 copper) was retired following erection of the Ennis-Tynagh line (200mm^2 S.C.A.). Survey work started on a second 110kV line from Erne to Letterkenny which will increase the security of supply to Co. Donegal and cater for new industrial load in the area.

Cables

Work on the installing of two 220kV cable circuits from Turlough Hill across the Wicklow Gap was nearing completion and the connection from the cavern to the switching Station had been made.

Distribution

During the year formal liaison established with the relevant local authorities considerably enhanced the planning of electricity supplies for the new satellite towns in the Dublin Area, referred to in last year's report. Plans have now been drafted for Tallaght and Blanchardstown and a similar plan is being prepared for Clondalkin.

Discussions have started with interested organisations to develop a policy for the removal of some of the "wire scapes" as part of village renewal programmes, particularly where there is local community effort involved.

Modern computer techniques using Project Control Systems for the programming and cost control of 38kV station construction jobs were applied in conjunction with District staff. The results have been very satisfactory.

The total value of stocks decreased by £650,000 despite an increase of approximately 4% in the price of materials. The decrease was achieved mainly in the stock of materials held for use in the construction of supply networks and transformer stations.

The Board's policy of encouraging Irish manufacturing firms was continued. The total value of orders issued was £38,000,000 of which £27,000,000 went to Irish firms.

In the past year the Board has intensified its study of alternatives to creosote as a preservative for wood poles used in its networks. A change to preservatives which do not have the disadvantages of creosote has been rendered difficult by the fact that the species of timber which grows best in this country is even less permeable to the alternatives than it is to creosote. Temporary measures to provide clean dry poles have had a fair measure of success and plans for a permanent solution are well advanced.

Rural Electrification

Under the legislation introduced by the Government in 1971 all rural areas are being given a final opportunity of availing of subsidised terms under the Rural Electrification Scheme in the four year period up to March 1975.

During the year 11,933 new rural consumers were connected and by the end of the year residents in 376 of the 792 rural areas into which the country is divided had been given an opportunity of availing of supply.

Capital expenditure was £4,189,523 which brings the total invested in the Rural Electrification Scheme to date to £55,609,366 of which £20,039,826 was by way of Government subsidy.

Robertstown, Co. Kildare, where the ESB is co-operating with the local community to place supply lines underground.



Personnel

In this era of technological progress and increased social awareness, the Board is faced with the many challenges which arise from the process of change. The effects of change are perhaps most strongly evident in the area of Personnel relations. It is the continuing objective of the Board to develop and maintain a progressive Personnel policy, and to seek opportunities for taking initiatives rather than merely awaiting developments to which it has to react.

In its dealings with the Trade Unions during the year the Board has pursued its stated aim of negotiating a charter for staff relations, which would include a new code of industrial relations practice, improved joint consultation, increased participation by staff at all levels and progress towards the eventual establishment of a single status employment. Attitude surveys and other appropriate techniques have been used or are in prospect in furtherance of these aims.

For the second successive year there was a slight reduction in overall manpower, reflecting the long-term policy of the Board to achieve a greater economy in the use of manpower (as recommended by the Fletcher Committee of Inquiry) by non-replacement of natural wastage.

While curtailing intake, it is also the Board's objective to develop to the full the potential of existing employees to use their skills more effectively. Training and development programmes were operated during the year for 2,400 employees at a cost of £380,000 and plans for improving the effectiveness of training are being implemented. The Apprenticeship programme involving 588 apprentices, cost £300,000.

The terms of the National Employer/Labour Agreement of July, 1972 were negotiated, for general application throughout the E.S.B., with the various Trade Unions representing the staff. In accordance with the emphasis on the efficient utilisation of manpower, all negotiations with the Trade Unions during the year have centred on the need to improve output and work practices, and the trend towards productivity agreements with all the major categories of staff within the provisions of the National Agreement was consolidated.

In the areas of both Industrial Relations and Training, joint management/union working parties to examine aspects of employment and make recommendations or prepare the ground for negotiations did valuable work, and provided examples of achievement through staff participation. The joint working party on Job Evaluation successfully carried out a pilot project with the co-operation of staff in a number of locations, and made recommendations which, if accepted by the Trade Unions, will result in the introduction of Job Evaluation in a major sector of the industry.

Following the satisfactory operation of the E.S.B. Industrial Council in its initial two-year term of office, a new agreement was negotiated which extends the normal term to three years. The Council dealt with 73 claims during the year and all of its recommendations were accepted by the Board and the Staff.
In a new development in Personnel relations, Staff Services Officers were appointed in several locations throughout the country to provide an expert and comprehensive advisory and information service to staff and management at local level on all aspects of employment.

At the end of the year the number of staff in the Board's employment was 11,700. The Board wishes to thank all of them for the manner in which they performed their duties during the year.

Fisheries and Environment

The Board's commitment to the preservation and development of amenity resources under its control and to its statutory obligations in relation to its fisheries is reflected in the increased expenditure totalling £161,000 under this heading.

Income from the sale of salmon and eels improved by £22,000 as a result of which net expenditure decreased by £5,000 despite increased costs.

A detailed report of the Board's activities on Fisheries and Conservation is being published separately.

In pursuit of a policy of pollution control and because of its statutory obligations in relation to fisheries, the Board's staff had numerous meetings with representatives of planning authorities, industrial undertakings, national bodies and Government Departments and wishes to record the co-operation which it received from practically all involved. Some offences reported by the Board's pollution officers ultimately led to prosecutions under the fisheries code. Biological and other related surveying operations continued in the Liffey estuary and Dublin Bay. This study of water quality and movement and of aspects of the biology and state of pollution of the river, estuary, and beaches is a continuing operation since it involves observations under constantly differing conditions so as to establish trends in the state of the environment. Dublin Corporation and the Dublin Port and Docks Board are cooperating in this survey.

Andrew Would of Carlow was fascinated by the ESB's live exhibit at the Scientific Exhibition at the RDS.



The resources of the civil engineering maintenance organisation were employed in the development of amenities at various locations, including the Liffey reservoir.

Progress on a wild life refuge for Pollaphuca was made and a proposal agreed by all interested was put to the Minister for Lands who, it is understood, is making a wild fowl Sanctuary Order.

Following the successful operation of the Board's smolt rearing stations on the Shannon and on the Lee, the Board has been investigating the problems associated with the rearing of salmon to market stage in controlled conditions in the sea.

(Signed) *T. Murray,* Chairman
C. Gordon Lambert
T. MacMahon
B. Ó Cearbhaill
J. A. Ryan

(Signed) *J. G. Gargan,* Secretary
27th July, 1973

Financial Accounts and Appendices for year ended 31st March, 1973

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Electricity Income and Expenditure Account

No. 1

	£	£	1971/72 £
Generation			
Fuel	13,659,798		
Operation, maintenance and local charges	6,736,342		
General charges	1,732,405		
Depreciation and provision for renewal of assets	4,889,437		
Interest	3,924,034		
Loan Amortisation	2,593,379		
Preservation and Operation of fisheries (net cost)	91,737		
		33,627,132	28,711,813
Transmission			
Operation, maintenance and local charges	923,641		
General charges	494,160		
Depreciation and provision for renewal of assets	1,287,783		
Interest	1,314,826		
Loan Amortisation	956,667		
		4,977,077	3,966,133
Distribution			
Operation, maintenance and local charges	10,631,197		
General charges	2,227,797		
Depreciation and provision for renewal of assets	4,467,780		
Interest	3,728,274		
Loan Amortisation	2,485,755		
		23,540,803	19,718,143
		£62,145,012	£52,396,089

	£	1971/72 £
Electricity Sales	60,321,031	51,967,000
Miscellaneous Income	488,675	428,601
Balance carried to Profit and Loss Account	1,335,306	488
	£62,145,012	£52,396,089

Notes:

1. Charges include: Local Rates £521,414; Central Transport and Stores Depot Costs £386,666; General Publicity £350,503; Bad Debts £97,677; Purchased Electricity £6,079; Audit Fee £11,000; Board Members' Remuneration (including full-time Chairman) £10,190.
2. The change in depreciation method from annuity to straight line on revised lifespans from 1st April, 1972, increases the incidence of the charge in the year by £1,040,000 after a reduction in interest charged on the accumulated depreciation fund of £1,990,000.
3. Electricity Sales exclude Turnover Tax £962,727 to 31st October, 1972 and VAT £1,444,149 from that date – Total £2,406,876.

No. 2

Appliance Sales Account

	£	£	1971/72 £		£	1971/72 £
Cost of Appliances sold		2,519,452	1,845,056	Sales, exclusive of Turnover Tax and VAT – £291,273	3,400,995	2,439,653
Direct costs		117,509	106,133			
Gross profit carried down		764,034	488,464			
		£3,400,995	£2,439,653		£3,400,995	£2,439,653
Overheads:				Gross profit brought down	764,034	488,464
Payroll costs	345,136					
Publicity	18,889					
Property charges including rent and rates	51,135					
Sundry expenses	41,623					
General charges and interest, as apportioned	120,350					
		577,133	475,835			
Profit transferred to Profit and Loss Account		186,901	12,629			
		£764,034	£488,464		£764,034	£488,464

No. 3

Installations Contracts Account

	£	£	1971/72 £		£	1971/72 £
Direct cost of contracts completed and charged		1,292,523	1,301,424	Credit taken for contracts completed and charged – exclusive of VAT – £38,338	1,565,961	1,538,582
Gross profit carried down		273,438	237,158			
		£1,565,961	£1,538,582		£1,565,961	£1,538,582
Overheads:				Gross profit brought down	273,438	237,158
Payroll costs	112,005					
Sundry expenses	14,427					
General charges and interest, as apportioned	99,708					
		226,140	215,593			
Profit transferred to Profit and Loss Account		47,298	21,565			
		£273,438	£237,158		£273,438	£237,158

Profit and Loss Account

No. 4

	£		£	£
Electricity Income and Expenditure (deficit)	1,335,306	Appliance Sales – Profit	186,901	
Loan Issue expenses	291,487	Installations Contracts – Profit	47,298	
				234,199
		Balance (deficit) carried down		1,392,594
	£1,626,793			£1,626,793
Balance brought forward from last year's account	1,318,253	Sale of scrap and credits from assets retired		706,306
Balance brought down	1,392,594	Balance carried forward		2,710,847
Transfer to Depreciation and Renewal Reserve (per contra)	706,306			
	£3,417,153			£3,417,153

No 5.

Balance Sheet

31st March, 1972 £		£	£	31st March, 1973 £
286,291,394	**Capital Assets** including work-in-progress, (at cost) as per Appendix A			318,057,763
286,291,394				
	Current Assets			
1,784,913	Cash at bank and in hand		308,602	
6,026,961	Temporary cash investment		20,000,000	
28,359,800	Debtors, materials and repayable jobs-in-progress, as per Appendix B		30,503,531	
36,171,674			50,812,133	
	Less:			
15,508,052	**Current Liabilities,** as per Appendix B		22,824,672	
20,663,622	**Net Current Assets**			27,987,461
	Investments at cost			
3,542,356	Loan sinking fund investments		4,632,749	
883,963	ESB stocks (nominal value £1,551,579)		1,380,364	
4,426,319				6,013,113
£311,381,335	**Assets less Current Liabilities**			£352,058,337
	Financed as follows:			
	Borrowings			
157,296,946	Stocks, bonds and long-term loans, as per Appendix C		188,443,526	
14,121,830	Short and medium term loans, including Hire Purchase Bills block discounted		7,824,949	
171,418,776				196,268,475
	Reserves			
137,157,503	Capital, as per Appendix D		153,241,139	
3,548,309	Loan sinking funds		4,684,570	
	Revenue Reserves:	£		
500,000	Plant, self-insurance	500,000		
75,000	Others	75,000		
			575,000	
(1,318,253)	Profit and Loss Account balance (deficit)		(2,710,847)	
139,962,559				155,789,862
£311,381,335				£352,058,337

Note: At 31st March 1973 contractual capital commitments amounted to approximately £31,000,000 (1972 – £21,000,000)

Signed: T. MURRAY *Chairman*

Signed: J. J. KELLY *Chief Executive*

L. J. BARRY *Director, Finance*

Statement, at Cost, of Capital Assets

A

	Total at 31st March, 1972 £	Additions less Retirements during year £	Total at 31st March 1973 £
Generation	107,588,836	700,900	**108,289,736**
Transmission	31,800,134	6,848,591	**38,648,725**
Distribution	107,211,397	9,202,714	**116,414,111**
General Buildings, Transport and Working Equipment	8,934,412	4,333,686*	**13,268,098**
Fisheries	118,810	56,982	**175,792**
	255,653,589	£21,142,873	**276,796,462**
Work-in-Progress, including payments on account	30,637,805		**41,261,301**
Total Investment in Capital Assets	£286,291,394		**£318,057,763**

*Includes £2,686,841 Working Equipment previously treated as current assets.

Statement of Current Assets and Current Liabilities

B

31st March, 1972 £		£	£	31st March, 1973 £
	Current Assets			
	Debtors (less provision for doubtful debts):			
	Electricity: billed	5,224,707		
12,290,525	unbilled	8,832,743		
			14,057,450	
3,288,688	Trading Debtors including Hire Purchase		4,648,890	
965,008	Miscellaneous		1,443,387	
16,544,221				20,149,727
	Materials at cost:			
2,109,711	Fuel		2,007,855	
8,699,032	Others		7,486,726	
10,808,743				9,494,581
1,006,836	Repayable Jobs-in-Progress at cost			859,223
£28,359,800				£30,503,531
	Current Liabilities			
7,703,246	Trade Creditors			10,907,372
504,703	Progress Payments on Repayable Jobs-in-Progress			369,480
—	Loans – Less than Twelve Month Term			2,177,000
3,320,312	Accrued Interest on Borrowings			4,131,618
1,069,850	Consumers' Deposits			1,318,905
2,909,941	Accrued Charges and Provisions			3,920,297
£15,508,052				£22,824,672

C

Statement of Outstanding Stocks, Bonds and Long Term Loans and their Redemption

Amount of Borrowing		Balance Outstanding 31st Mar. 1972 £	Borrowed during year £	Adjustment for currency changes £	Redeemed during year £	Balance Outstanding 31st Mar. 1973 £
	Minister for Finance:					
£68,450,236	Advances under the Electricity (Supply) Acts and the Shannon Fisheries Act, 1935	**53,889,497**			1,036,454	**52,853,043**
		53,889,497			1,036,454	**52,853,043**
	Public Issues:					
	Stocks:					
£10,000,000	5% redeemable 1966-1975	**6,330,176**			259,620	**6,070,556**
£ 5,000,000	6% redeemable 1968-1978	**3,444,568**			205,931	**3,238,637**
£12,000,000	6% redeemable 1982-1987	**9,413,106**			641,722	**8,771,384**
£16,500,000	6% redeemable 1984-1989	**12,712,026**			719,849	**11,992,177**
£13,000,000	7% redeemable 1986-1991	**11,484,984**			397,715	**11,087,269**
£ 7,000,000	7¼% redeemable 1988-1993	**6,585,094**			174,963	**6,410,131**
£ 9,250,000	9½% redeemable 1985-1990	**9,072,708**			192,642	**8,880,066**
£ 3,250,000	6% Premium, redeemable 1975 (repayable at 20% premium)	**3,174,711**			27,951	**3,146,760**
£ 2,800,000	6% Premium, redeemable 1976 (repayable at 20% premium)	**2,699,566**			84,728	**2,614,838**
£12,000,000	9% redeemable 1992-1995	**12,000,000**			265,841	**11,734,159**
		76,916,939			2,970,962	**73,945,977**
	Bonds:					
E.U.A. 15,000,000	European Units of Account 8¼% repayable by annual instalments 1972/1986	**6,202,704**		1,474,758	435,780	**7,241,682**
B. Francs 1,000,000,000	Belgian Franc 7½% Registered Bonds – repayable in full 1983		9,608,291	518,291		**10,126,582**
		83,119,643	9,608,291	1,993,049	3,406,742	**91,314,241**
	Long Term Loans:					
£500,000	New Ireland Assurance Co. Ltd. 6% – repayable by ½ yearly instalments 1962/87	**380,891**			16,252	**364,639**
DM 1,000,000	German Banks 7¾% – repayable by annual instalments 1975/1984	**119,875**		19,595	139,470	
£14,865,000	Central Bank of Ireland 7¼% – repayable ½ yearly instalments 1972/1987	**14,865,000**			574,387	**14,290,613**
$14,500,000*	International Bank for Reconstruction and Development 6½% – repayable by ½ yearly instalments, 1974/1994	**4,475,337**	1,109,999	830,361		**6,415,697**
$20,000,000*	International Bank for Reconstruction and Development 7¼% – repayable by ½ yearly instalments 1976/1987	**446,703**	380,575	5,027		**832,305**
$15,000,000*	International Bank for Reconstruction and Development 7¼% – repayable by ½ yearly instalments 1977/1988		243,230	– 3,710		**239,520**
$30,000,000	Japanese Banks 7¾% – repayable by yearly instalments 1973/1992		12,766,976	– 633,508		**12,133,468**
£10,000,000	Northern Bank Finance Corporation (Leader of a Bank syndicate) – repayable by annual instalments 1973/1982		10,000,000			**10,000,000**
		20,287,806	24,500,780	217,765	730,109	**44,276,242**
	Total	**£157,296,946**	£34,109,071	£2,210,814	£5,173,305	**£188,443,526**

*Drawdown scheduled over phased period.

Statement of Capital Reserves

	£	£	£
Non-Repayable Capital Contributions:			
Contributions from Minister for Finance under Electricity (Supply) Acts towards capital cost of supplying rural areas – as at 31st March, 1972	18,739,826		
Received in year	1,300,000		
		20,039,826	
Other contributions – as at 31st March, 1972	3,321,517		
Received in year	390,336	3,711,853	
			23,751,679
Repaid Capital Reserve:			
Loan amortisation, less intangible assets, foreign loans revaluations and loan discounts written off – as at 31st March, 1972		26,632,684	
Movements in year:			
Loan Amortisation	5,615,268		
Discount on Loans	(687,175)		
Borrowings in Foreign Currencies; net changes at year end values – see note 8 of Accounting Policies	(2,210,814)	2,717,279	
			29,349,963
Depreciation and Assets Renewals Reserve:			
Provision for depreciation, renewal and retirement of assets, together with proceeds of disposal of assets retired, less assets retired, as at 31st March, 1972		88,463,476	
Movements in year:			
Depreciation and provision for renewal of assets	10,883,478		
Transfer of accumulated depreciation provision for Working Equipment (Working Equipment is now treated as a General Asset)	1,511,613		
Credits arising on disposal of assets retired	706,306		
Assets retired against Reserve	(1,425,376)	11,676,021	
			100,139,497
Total as at 31st March, 1973			**£153,241,139**

E

Statement of Generation and Transmission Costs

Generation	Fuel £	Operation £	Maintenance £	Local Charges £	WORKS COST 1972/1973 £	Per Unit Sent Out Pence	1971/1972 £	Per Unit Sent Out Pence	Depreciation and Renewals £	TOTAL COST 1972/1973 £	1971/1972 £
Coal/Oil											
Marina	791,797	227,556	190,329	48,173	**1,257,855**	·289	1,275,128	·337	280,804	**1,538,659**	1,454,128
Ringsend	1,905,376	440,852	365,321	65,682	**2,777,231**	·279	3,126,644	·217	626,482	**3,403,713**	3,519,644
Arigna	404,808	97,143	52,517	18,269	**572,737**	·888	560,532	·756	45,646	**618,383**	590,532
Great Island	1,147,060	223,292	209,398	49,746	**1,629,496**	·250	1,237,442	·237	662,869	**2,292,365**	1,437,442
Tarbert	754,817	157,645	100,908	32,398	**1,045,768**	·223	1,391,191	·189	410,117	**1,455,885**	1,638,191
Poolbeg	2,303,832	236,862	114,474	33,953	**2,689,121**	·174	868,881*	·167	916,517	**3,605,638**	1,125,881
Sod Peat (Machine)											
Portarlington	691,519	181,831	139,726	33,579	**1,046,655**	·792	984,342	·768	77,468	**1,124,123**	1,033,342
Allenwood	655,963	189,879	160,265	35,662	**1,041,769**	·835	1,166,488	·727	117,566	**1,159,335**	1,240,488
Lanesborough	321,663	91,106	44,609	12,675	**470,053**	·653	595,888	·562	48,586	**518,639**	627,888
Milled Peat											
Ferbane	1,264,331	278,982	211,978	46,837	**1,802,128**	·575	1,990,162	·543	275,175	**2,077,303**	2,168,162
Rhode	1,216,353	208,949	164,887	37,636	**1,627,825**	·499	1,670,157	·495	218,698	**1,846,523**	1,815,157
Bellacorick	645,686	167,325	119,075	30,767	**962,853**	·576	857,766	·556	123,276	**1,086,129**	937,766
Shannonbridge	553,158	139,892	82,788	24,013	**799,851**	·460	797,468	·433	132,962	**932,813**	887,468
Lanesborough	621,300	104,921	54,650	17,648	**798,519**	·413	801,332	·408	134,700	**933,219**	891,332
Sod Peat (Hand-Won)											
Four 5 MW Stations	199,927	131,023	81,632	21,715	**434,297**	1·452	414,910	1·159	67,918	**502,215**	456,910
Peak Station											
North Wall	108,481	128,987	96,171	25,599	**359,238**	—	422,191	—	135,972	**495,210**	515,191
Stand-by											
Pigeon House	67,648	134,511	60,798	19,156	**282,113**	—	244,430	—	81,844	**363,957**	298,430
Total Fuel Stns.	13,653,719	3,140,756	2,249,526	553,508	**19,597,509**	·341	18,404,952	·338	4,356,600	**23,954,109**	20,637,952
Hydro											
Shannon	—	118,926	175,584	49,788	**344,298**	·120	332,252	·154	136,272	**480,570**	381,252
Erne	—	71,318	95,357	28,505	**195,180**	·081	178,745	·098	197,720	**392,900**	258,745
Liffey	—	41,080	51,945	20,691	**113,716**	·320	112,425	·285	48,402	**162,118**	134,425
Lee	—	37,750	39,443	15,231	**92,424**	·136	81,069	·115	123,333	**215,757**	133,069
Clady	—	15,327	10,239	2,421	**27,987**	·219	27,230	·259	27,110	**55,097**	37,230
Total Hydro Stns.	—	284,401	372,568	116,636	**773,605**	·120	731,721	·141	532,837	**1,306,442**	944,721
Total All Stns.	13,653,719	3,425,157	2,622,094	670,144	**20,371,114**	·319	19,136,673	·321	4,889,437	**25,260,551**	21,582,673
Transmission	—	170,417	457,299	259,157	**886,873**	—	724,817	—	1,287,783	**2,174,656**	1,635,817
Grand Total	13,653,719	3,595,574	3,079,393	929,301	**21,257,987**	—	19,861,490	—	6,177,220	**27,435,207**	23,218,490
Electricity purchased in bulk										**6,079**	22,764
Interest:											
Generation									3,924,034		
Transmission									1,314,826	**5,238,860**	4,994,903
Loan Amortisation:											
Generation									2,593,379		
Transmission									956,667	**3,550,046**	2,210,525
Central Transport and Stores										**55,715**	49,176
General Charges:											
Generation									1,732,405		
Transmission									494,160	**2,226,565**	2,085,174**
***Preservation and Operation of Fisheries (Net cost)										**91,737**	96,913
TOTAL COST										**£38,604,209**	£32,677,945

*Recently commissioned.

**Includes capital charges on General Assets (£214,392) now shown with depreciation, interest and loan amortisation.

***Now included in Electricity Income and Expenditure Account.

Preservation and Operation of Fisheries

			1971/72	
	£	£	£	£
Direct costs of preservation and operation		118,414		107,571
Overheads:				
Payroll expenses and charges	29,995		26,259	
Depreciation and renewals	6,000		4,000	
Interest and loan amortisation	6,455	42,450	6,456	36,715
		£160,864		£144,286
Less:				
Sales of fish, letting of fishing rights and miscellaneous income		69,127		47,373
Net Cost as per Electricity Income and Expenditure Account		£91,737		£96,913

G

Statement of Interest and Loan Amortisation

			1971/72
Interest:	£	£	£
Interest payable to the Minister for Finance	2,425,248		
Interest on ESB Stocks and on other loans (less temporary investment earnings)	8,176,035		
Stock management charges	46,753		
		10,648,036	11,165,927
Loan Amortisation:			
Repayment of capital advances from the Minister for Finance	1,036,454		
Sinking fund provisions for redemption of ESB Stocks and other Loans	5,001,370		
		6,037,824	3,977,136
		£16,685,860	£15,143,063
Allocated as follows:			
Interest:			
Income and Expenditure Account:			
Generation	3,924,034		
Transmission	1,314,826		
Distribution	3,728,274		
Installations Account	55,900		
Appliance Sales Account	21,500		
Preservation and Operation of Fisheries	4,432		
Capital Works	1,599,070		
		10,648,036	11,165,927
Loan Amortisation:			
Income and Expenditure Account:			
Generation	2,593,379		
Transmission	956,667		
Distribution	2,485,755		
Preservation and Operation of Fisheries	2,023		
		6,037,824	3,977,136
		£16,685,860	£15,143,063

NOTES ON AND FORMING PART OF THE FINANCIAL ACCOUNTS AND APPENDICES.

The Accounts are prepared in accordance with the Electricity (Supply) Acts

Accounting Policies

1. Capital Assets:

Capital Assets are valued at cost. Cost includes prime cost, overheads and interest costs during construction.

2. Depreciation of Capital Assets:

Assets are grouped and allotted lifespans in line with international practice. Depreciation is provided on all assets in commission on 1st April each year (other than on new generation stations) even where they have exceeded their allotted lifespans. Assets when retired from service are charged against, and proceeds of assets disposed of are credited to, Depreciation and Assets Renewals Reserve. In the case of new generation stations depreciation commences from the date of commissioning if prior to 31st December.
As from 1st April, 1972 depreciation on the straight line method is applied.

3. Materials:

Stocks of materials are valued at average cost; fuel stocks are valued at delivered cost.

4. Repayable Jobs-in-Progress:

Installations Contracts are valued at direct cost together with appropriate overheads; sundry jobs at direct cost.

5. Debtors:

Bad Debts are written off as they arise. A provision for doubtful debts, considered adequate in relation to the size and nature of the business, is maintained.

6. Loan Amortisation:

Long Term Loans and Public Issues (Appendix C) – Amortisation is in line with the contractual ageements.
Medium and Short Term Loans – These are repaid in accordance with the contractual agreements but amortisation is provided on a 20 year basis.

Where loan proceeds are used for a period in excess of six months in the year of drawdown, revenue is charged with proportionate amortisation in that year. (Policy applies from 1st April, 1972)

7. Capital Borrowings:

Borrowings are classified in accordance with the total duration of contracted repayment terms, irrespective of phased repayment arrangements, and of the lapsed portion of repayment period.
Discounts on loans are charged against the Repaid Capital Reserve. Other borrowing costs are charged against Profit and Loss Account

8. Borrowings in Foreign Currencies:

Irish Pound equivalent is at exchange rates ruling at year end to reflect significant changes in parities. Changes are reflected in the Capital Reserve.

9. Hire Purchase Transactions:

Profit on Hire Purchase sales is taken in the year of sale. Credit for interest is taken over the Hire Purchase term.

10. Apportionments:

(a) Capital Expenditure, Appliance Sales, Installations Contracts and Fisheries bear their relevant proportion of general overhead expenses and interest.
(b) Electricity Income and Expenditure Account bears the proportion of Appliance Sales and Installations Contracts overhead expenses related to the promotion of sales of electricity.

11. Taxation:

The Board is liable for Income Tax but is exempt from Corporation Profits Tax. Because of large continuing capital expenditure, liability to tax will not arise in the foreseeable future and a tax equalisation reserve is not deemed necessary.

Auditors' Report

As Auditors appointed by the Minister for Transport and Power, with the consent of the Minister for Finance, we have examined the Financial Statements numbered 1 to 5 and Appendices A to H, which have been prepared in accordance with the Electricity (Supply) Acts.

We have obtained all the information and explanations which we considered necessary for the Audit, and the Financial Statements and Appendices are in agreement with the books of account.

Allocations to the various Accounts, made by the Board's Officials and approved by the Board, covering overhead expenses, interest and capital repayments, and costs of Generation, Transmission and Distribution, have been made on a basis consistent with that of the previous year.

In our opinion:

(a) Proper Books of Account have been kept and proper Returns have been received from offices not visited by us.

(b) The Balance Sheet, Financial Statements numbered 1 to 4 and the Appendices, when read in conjunction with the Notes appearing thereon, give, in the context of the Electricity (Supply) Acts and the Accounting Policies of the Electricity Supply Board, a true and fair view of the outcome of the Revenue operations of the Board for the year ended 31st March, 1973 and of the state of the Board's affairs as at that date.

Harcourt House,
Harcourt Street,
Dublin 2.

STOKES KENNEDY CROWLEY & CO.
Chartered Accountants

19th July, 1973

Appendices

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Appendix 1

Number of Consumers and Electricity Sales

District	No. of Consumers at 31st March		Electricity Sales Units sold in Year Ended 31st March	
	1973	1972	1973 (Millions)	1972 (Millions)
Athlone	47,965	46,778	196.5	181.3
Cork	95,842	92,874	682.3	621.4
Dublin City	136,377	135,701	1065.6	1025.9
Dublin North West	81,995	74,415	729.2	639.2
Dublin South	52,503	50,693	441.3	419.3
Dundalk	65,324	63,398	473.7	420.8
Galway	47,443	45,608	238.3	219.4
Limerick	77,821	75,656	598.9	552.3
Portlaoise	56,469	55,048	340.4	316.6
Sligo	76,749	74,684	253.6	218.9
Tralee	40,265	39,387	176.7	164.8
Waterford	66,366	64,274	508.6	491.8
Totals	845,119	818,516	5705.1	5271.7

Growth of Electricity Sales and Number of Consumers

Appendix 2

Year Ended 31st March	Units Generated (and Purchased) Millions	Units Sold to Consumers Millions	Revenue from Electricity Sales Thousands	Average Price per Unit Sold New Pence	Total Consumers
			£		
1930	60.9	43.2	478	1.108	48,606
1935	206.1	157.0	1,258	0.800	103,037
1940	407.0	318.6	1,946	0.612	172,545
1945	406.3	319.0	2,458	0.771	228,008
1950	784.8	626.2	4,774	0.763	310,639
1955	1,461.7	1,192.2	9,522	0.800	461,901
1960	2,096.0	1,692.2	14,724	0.871	610,946
1961	2,262.3	1,863.6	16,263	0.871	628,241
1962	2,453.0	2,005.1	17,731	0.883	642,753
1963	2,714.9	2,238.5	19,445	0.867	659,932
1964	2,900.8	2,375.9	20,383	0.858	678,054
1965	3,240.2	2,682.6	22,488	0.838	697,491
1966	3,546.2	2,953.3	24,077	0.817	716,113
1967	3,851.0	3,238.1	26,690	0.825	726,561
1968	4,246.4	3,570.1	29,898	0.838	745,430
1969	4,749.0	4,012.3	34,457	0.858	765,213
1970	5,245.7	4,411.6	39,400	0.892	786,500
1971	5,921.0	4,862.1	44,082	0.907	805,736
1972	6,234.2	5,271.7	51,750	0.982	818,516
1973	6,749.1	5,705.1	60,321	1.057	845,119

The above table shows, quinquennially, from 1930 to 1960 and for each year since, the number of units generated and sold, the revenue, the average price per unit and the number of consumers.

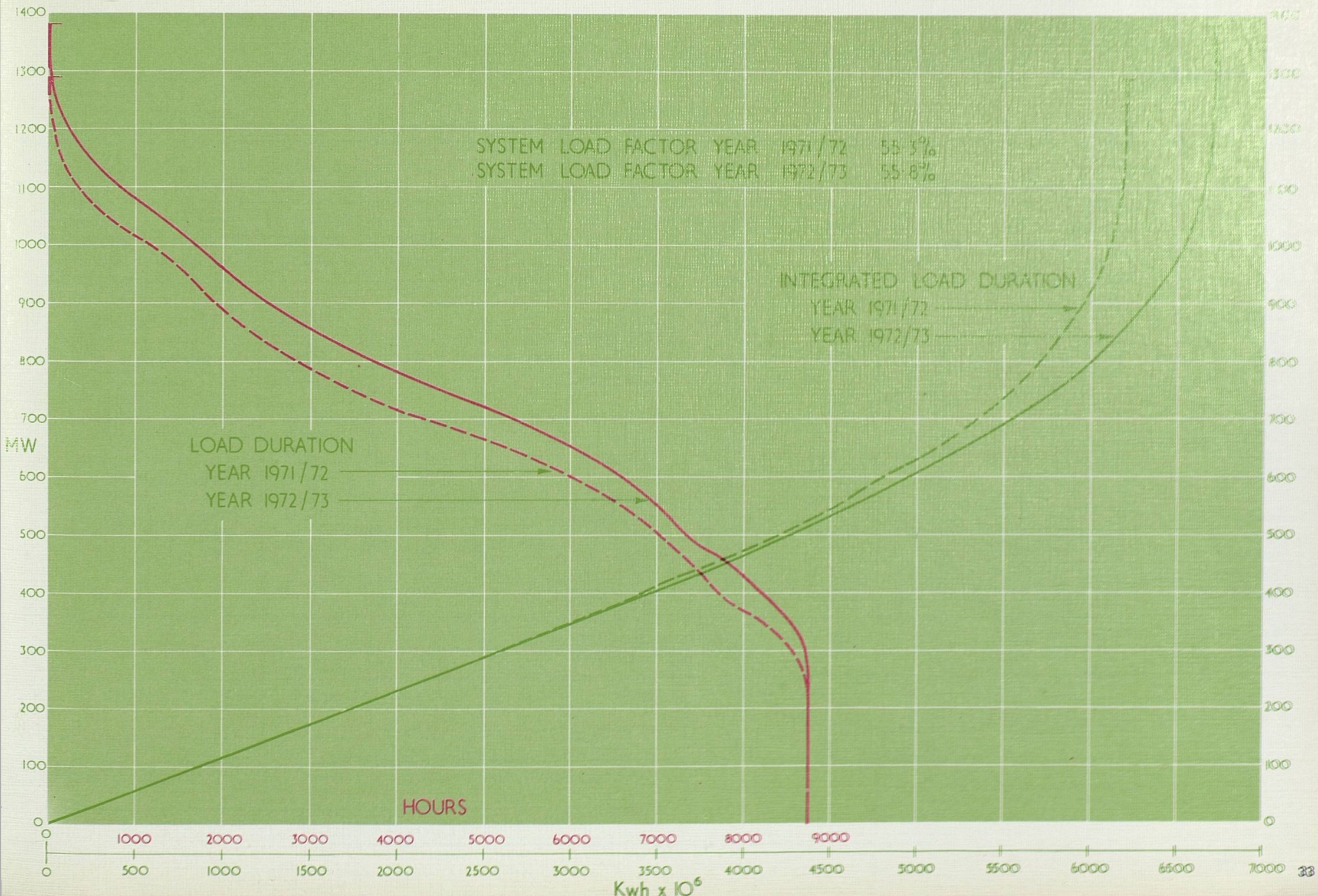
Appendix 3

Analysis of Units Sold

Class of Supply	Year Ended 31st March 1973 (Millions)	Year Ended 31st March 1972 (Millions)	Increase (Millions)	Percentage Increase
DOMESTIC				
General Supply	2,226.3	2,097.0	129.3	6.2
Night Space Heating	307.0	277.3	29.7	10.7
	2,533.3	2,374.3	159.0	6.7
COMMERCIAL				
Lighting	228.1	204.0	24.1	11.8
Heating, Cooking and Waterheating	318.6	308.9	9.7	3.1
Motive Power	216.8	203.4	13.4	6.6
Night Space Heating	228.8	212.8	16.0	7.5
Public Lighting	63.1	57.6	5.5	9.5
Miscellaneous	175.7	167.9	7.8	4.6
	1,231.1	1,154.6	76.5	6.6
INDUSTRIAL				
Maximum Demand	1,761.0	1,560.8	200.2	12.8
Lighting	17.6	17.7	—0.1	—0.6
Heating, Cooking and Waterheating	40.0	39.9	0.1	0.3
Motive Power	112.0	114.2	—2.2	—1.9
Night Space Heating	10.1	10.2	—0.1	—1.0
	1,940.7	1,742.8	197.9	11.4
Total	5,705.1	5,271.7	433.4	8.2

SYSTEM LOAD DURATION AND INTEGRATED LOAD DURATION CURVES
YEAR 1972/73

Appendix 4.



Appendix 5

Generation Statistics for the Year 1972/73

Station	Year 1972/73			Year 1971/72
	Generated million units	Station use million units	Sent out million units	Sent out million units
Ardnacrusha	290.0	3.3	286.7	215.1
Cliff	71.2	0.7	70.5	53.4
Cathaleen's Fall	172.5	2.0	170.5	129.9
Carrigadrohid	19.7	0.3	19.4	18.4
Inniscarra	49.2	0.7	48.5	51.9
Pollaphuca	18.1	0.8	17.3	20.4
Golden Falls	7.2	0.2	7.0	7.8
Leixlip	11.3	0.1	11.2	11.3
Clady	12.9	0.1	12.8	10.5
Ferbane	339.0	25.8	313.2	366.8
Rhode	351.4	24.9	326.5	337.4
Bellacorick	181.5	14.4	167.1	154.2
Shannonbridge	185.6	11.8	173.8	184.3
Lanesboro	284.9	19.7	265.2	302.2
Portarlington	141.2	9.0	132.2	128.2
Allenwood	133.1	8.3	124.8	160.4
Cahirciveen	15.9	1.5	14.4	10.8
Milltown-Malbay	2.1	0.4	1.7	3.1
Screeb	2.4	0.3	2.1	2.9
Gweedore	13.0	1.3	11.7	19.0
Poolbeg	1,615.5	69.4	1,546.1	519.3
Pigeon House	18.2	4.2	14.0	5.3
North Wall	41.7	4.8	36.9	95.8
Ringsend	1,057.3	60.8	996.5	1,442.7
Marina	457.8	22.7	435.1	378.8
Great Island	693.2	40.6	652.6	521.5
Tarbert	491.3	22.6	468.7	736.3
Arigna	69.2	4.7	64.5	74.1
E.S.B. Import	*—		—	4.1
E.S.B. Export	—		—	65.9
Purchased	2.7		2.7	3.2
Totals	6,749.1	355.4	6,393.7	5,903.2
Maximum daily generation, million units			26.5	24.8
Maximum load generated in kW			1,383,000	1,290,000

The total electricity production was 6,749 million units, an increase of 515 million units (8.3%) over the previous year.

Production from native sources provided 35.1% of total demand.

*Due to the damage referred to in last year's report the North/South interconnection was not used during the year.

Particulars and Performance of Generating Plant

Hydro Stations

Station	River	Average annual generation million units	Plant Particulars		Plant Performance in year ended 31/3/'73		
			Generating Sets		Units sent out millions	Plant load factor %	Works cost per unit sent out new pence
			No.	Capacity (MW)			
Ardnacrusha	Shannon	331	4	85	286.7	39.1	0.120
Pollaphuca	Liffey	48	2	30	35.5	7.2	0.320
Golden Falls			1	4		21.5	
Leixlip			1	4		33.7	
Cliff	Erne	269	2	20	241.0	42.5	0.081
Cathleen's Fall			2	45		45.8	
Carrigadrohid	Lee	85	1	8	67.9	29.4	0.136
Inniscarra			2	19		30.9	
Clady	Clady	14	1	4	12.8	37.0	0.219

Pumped Storage Station

Station	Location	Plant Particulars	
		Generating Sets	
		No.	Total Capacity (MW)
Turlough Hill (Under Construction)	Co. Wicklow	4	292

Appendix 6 CONT.

Particulars and Performance of Generating Plant

Steam Stations

Station	Location	Plant Particulars					Plant Performance in year ended 31/3/'73			
		Generating Sets		Boilers			Units sent out millions	Plant load factor %	Fuel cost per unit sent out new pence	Works cost per unit sent out new pence
		No.	Total Capacity MW	No.	Total Capacity Tonne/hour	Fuel Type				
Arigna	Co. Roscommon	1	15	1	75	Coal	64.5	52.8	0.628	0.888
Lanesborough	Co. Longford	2	60	1 1	100 173	Sod Peat Milled Peat	72.0 193.2	43.3 59.9	0.447 0.322	0.653 0.413
Rhode	Co. Offaly	3	80	3	364	Milled Peat	326.5	50.3	0.373	0.499
Bellacorick	Co. Mayo	2	40	2	191	Milled Peat	167.1	51.9	0.386	0.576
Shannonbridge Shannonbridge (under construction)	Co. Offaly	1 1	40 40 — 80	1 1	173 173	Milled Peat Milled Peat	173.8	53.1	0.318	0.460
Great Island	Co. Wexford	3	240	3	853	Oil	652.6	35.1	0.176	0.250
Tarbert Tarbert (under construction)	Co. Kerry	2 2	120 500 620	2 2	473 1600	Oil Oil	468.7	46.9	0.161	0.223
Poolbeg	Dublin City	2	240	2	760	Oil	1,546.1	76.7	0.149	0.174
		2	28	Gas Turbine Sets				3.2		

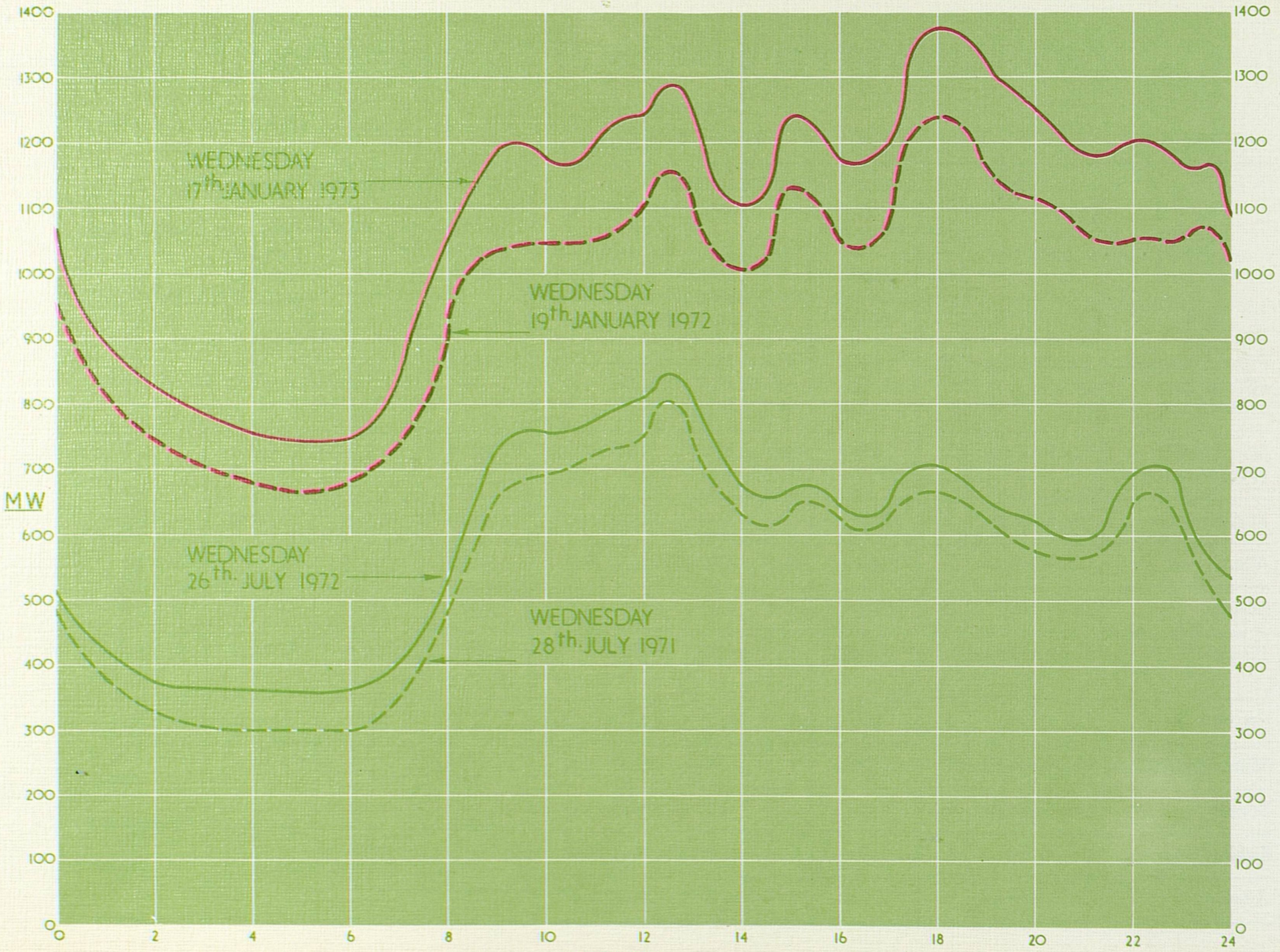
Particulars and Performance of Generating Plant

Steam Stations

Station	Location	Plant Particulars					Plant Performance in year ended 31/3/'73			
		Generating Sets		Boilers			Units sent out millions	Plant load factor %	Fuel cost per unit sent out new pence	Works cost per unit sent out new pence
		No.	Total Capacity MW	No.	Total Capacity Tonne/hour	Fuel Type				
Pigeon House (Stand-by Station)	Dublin City	5	90	8	364	Oil	14.0	—	—	—
North Wall (Peak Station)	Dublin City	3	48	3	225	Oil	36.9	9.1	—	—
Portarlington	Co. Laoise	3	37.5	3	205	Sod Peat	132.2	43.1	0.523	0.792
Allenwood	Co. Kildare	2	40	4	273	Sod Peat	124.8	38.1	0.526	0.835
Marina	Cork City	3	120	4	522	Oil	435.1	43.7	0.182	0.289
Ringsend	Dublin City	6	270	7	1114	Oil	996.5	44.9	0.191	0.279
Ferbane	Co. Offaly	4	90	4	430	Milled Peat	313.2	43.1	0.404	0.575
Miltown-Malbay	Co. Clare	1	5	1	28	Sod Peat	29.9	19.1	0.669	1.452
Screeb	Co. Galway	1	5	1	28	Sod Peat				
Cahirciveen	Co. Kerry	1	5	1	28	Sod Peat				
Gweedore	Co. Donegal	1	5	1	28	Sod Peat				

Appendix 7

SYSTEM DAILY LOAD CURVES YEAR 1972/73



Transmission System at 31st March, 1973

Transmission Stations

Transformer/Switching Stations	No. in commission	Increase for year	Total capacity in kVA	Increase or decrease in capacity for year in kVA
220 kV Stations	8	1	600,000 at 275/220 kV	+300,000
			1,253,000 at 220/110 kV	+250,000
			420,000 at 13/220 kV	Nil
			47,000 at 10/220 kV	Nil
			310,000 at 10/110 kV	Nil
			20,000 at 110/ 6 kV	Nil
110 kV Stations	60	4	2,363,500 at 110/ 38 kV	+168,000
			59,000 at 110/ 10 kV	Nil
			60,000 at 110/ 6 kV	Nil
			110,400 at 38/ 10 kV	Nil
			1,151,000 at 10/110 kV	Nil
			88,000 at 10/38/110 kV	Nil
			5,000 at 10/38 kV	Nil

Transmission Lines and Cables

Lines and cables	Length kms.	Increase or decrease for year kms.	Description
275 kV lines	10.5	Nil	6 x twin 485 sq.mm double circuit SCA
220 kV lines	20.1	+1.0	6 x 600 sq.mm. double circuit SCA
220 kV lines	309.8	+195.2	3 x 600 sq.mm. single circuit SCA
220 kV lines	276.8	—0.7	3 x 425 sq.mm. single circuit SCA
110 kV lines	7.4	Nil	6 x 95 sq.mm. double circuit copper
110 kV lines	568.7	—70.5	3 x 95 sq.mm. single circuit copper
110 kV lines	91.6	Nil	6 x 200 and 6 x 300 sq.mm. double circuit SCA
110 kV lines	2512.3	+126.6	3 x 200 to 3 x 425 sq. mm. single circuit SCA
220 kV cables	27.1	Nil	3 single core oil filled
110 kV cables	20.35	+3.25	3 single core oil filled
110 kV cables	17.9	+0.5	3 core oil filled
110 kV cables	25.6	Nil	3 core pipe compression

Appendix 9

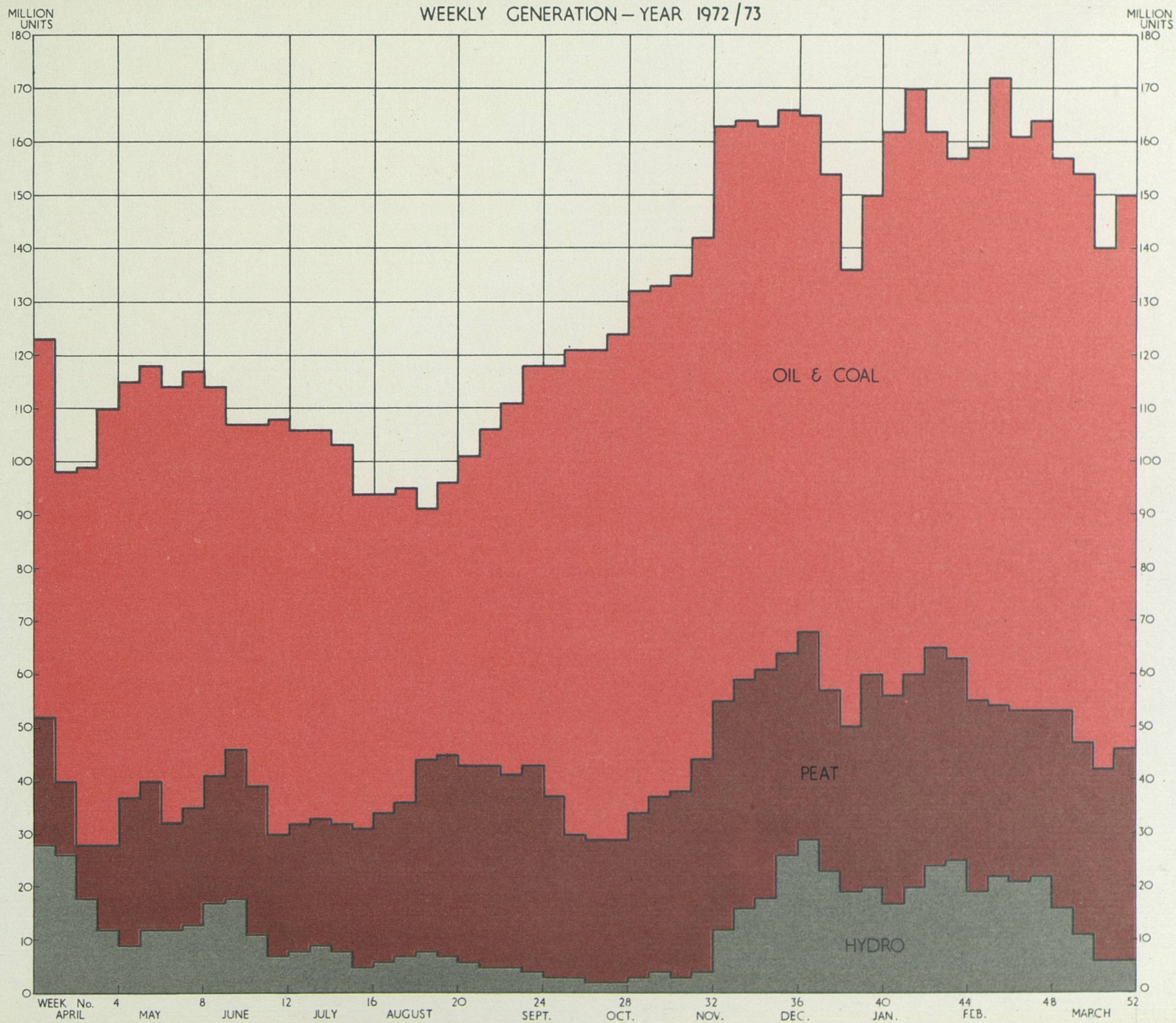
Distribution System at 31st March, 1973

Distribution System (Excluding Rural Networks)

Transformer stations	No. in commission	Increase (+) or Decrease (—) for year	Total capacity in kVA	Increase (+) or decrease (—) for year in kVA
38 kV Stations	305	+10	1,968,700	+129,800
10 kV Stations (Excl. U.R.D.)	7,029	+315	1,600,780	+91,076
10 kV Stations U.R.D.	1,430	+407	82,154	+21,325
5 kV Stations	53	Nil	32,590	Nil

Distribution lines and cables	Length kms.	Increase (+) or Decrease (—) for year km.	Description
38 kV lines	4,815.0	+126.8	3 x 25 to 3 x 300 sq.mm. Cu. and SCA.
38 kV cables	223.5	+8.5	3x95 to 3x680 sq.mm. Solid, oil filled and Polyethelene.
10 kV lines	6,206.3	+42.6	Single and three phase.
10 kV and 5 kV cables	1,954.7	+116.0	2 x 16 to 3 x 185 sq.mm.
3.3 kV cables	3.7	—	3 x 185 sq.mm.

WEEKLY GENERATION – YEAR 1972/73



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